

Claims

1. Mixing device (1) with a drum (3, 4) which can receive ingredients, the drum (3, 4) comprising a cylindrical vessel (4), and mixing means, which are able to mix the ingredients in the interior of the cylindrical vessel (4), the mixing means being arranged rotatably about a mixing spindle (6), characterised in that the longitudinal axis of the cylindrical vessel (4) extends horizontally.
2. Mixing device according to claim 1, characterised in that the longitudinal axis of the cylindrical vessel (4) and the mixer spindle (6) extend coaxially.
3. Mixing device according to claim 1 or 2, characterised in that the internal diameter (4A) of the drum (3, 4) is greater than the internal length of the drum.
4. Mixing device according to any of the preceding claims, characterised in that the internal diameter of the cylindrical vessel (4) is greater than the length of the vessel (4).
5. Mixing device according to any of the preceding claims, characterised in that reinforcement rings (18) are provided on the drum (3, 4) or on the vessel (4).
6. Mixing device according to any of the preceding claims, characterised in that the reinforcement rings (18) are provided on the exterior of the drum (3, 4).

7. Mixing device according to any of the preceding claims, characterised in that the cylindrical vessel (4) has an access opening, which can be sealed by an inserted door (13), the door being laterally hinged, in particular about a substantially vertically extending axis.
8. Mixing device according to any of the preceding claims, characterised in that the access opening has such dimensions as to allow easy access for persons into the interior of the drum (3, 4).
9. Mixing device according to any of the preceding claims, characterised in that a flat plate (9) which can be fitted with filling pipes for the ingredients is provided on the upper region of the vessel (4).
10. Mixing device according to any of the preceding claims, characterised in that the flat plate (9) is detachably connected to the vessel, in particular screwed to it.
11. Mixing device according to any of the preceding claims, characterised in that holes (16a, 16b) with different sized diameters for the introduction of the ingredients are provided in the flat plate (9).
12. Mixing device according to any of the preceding claims, characterised in that the vessel can be emptied in the lower region via a lower opening (at 17).
13. Mixing device according to any of the preceding claims, characterised in that the lower opening (at 17) can be

sealed by one or more plates, the plates having the same curve, therefore the same radius, as the mixer vessel.

14. Mixing device according to any of the preceding claims, characterised in that the lower opening stretches substantially along the whole length of the cylindrical vessel (4).
15. Mixing device according to any of the preceding claims, characterised in that the cross-section of the opening is of dimensions that prevent total emptying of the drum from taking place, which would require a bunker located underneath with the same volume as the volume of the ingredients.
16. Mixing device according to any of the preceding claims, characterised in that the cross-section of the opening is variable.
17. Mixing device according to any of the preceding claims, characterised in that the mixing means are able to convey the ingredients in an axial direction.
18. Mixing device according to any of the preceding claims, characterised in that the mixing means are able to convey the ingredients in a radial direction.
19. Mixing device according to any of the preceding claims, characterised in that oblique surfaces are provided on the mixing means which can lead to an axial conveyance of the ingredients as an alternative or in addition.

20. Mixing device according to any of the preceding claims, characterised in that the mixing means have shovels, which formed so that they can throw the ingredients upwards.
21. Mixing device according to any of the preceding claims, characterised in that the mixing means are arranged as a spiral such that they can cause an axial conveyance of the ingredients.
22. Mixing device according to any of the preceding claims, characterised in that the mixing means are formed in such a way that the ingredients can be moved in the direction of a common point.
23. Mixing device according to any of the preceding claims, characterised in that the mixing means have at least two, a maximum of six, preferably three to five, optimally four shovels.
24. Mixing device according to any of the preceding claims, characterised in that the cylindrical vessel (4) is closed at the end face by end walls (3), the vessel and the end walls forming the mixing space.
25. Mixing device according to any of the preceding claims, characterised in that the end walls (3) have a circular cross-section.
26. Mixing device according to any of the preceding claims, characterised in that the end walls (3) have an outwardly conical shape.

27. Mixing device according to any of the preceding claims, characterised in that the end walls (3) are formed as a type of curved plate.
28. Mixing device according to any of the preceding claims, characterised in that the end walls (3) are formed as a type of dished head.
29. Mixing device according to any of the preceding claims, characterised in that the transition of the inner wall of the cylindrical vessel (4) to the inner wall of the end wall (3) extends at an angle greater than 30 degrees and smaller than 90 degrees, preferably greater than 40 degrees and smaller than 60 degrees.
30. Mixing device according to any of the preceding claims, characterised in that one end wall (3) is arranged movably such that it can be brought into two positions, that is into a first position in which the drum (3, 4) is sealed and into a second position in which the interior of the drum (3, 4) is accessible to persons.
31. Mixing device according to any of the preceding claims, characterised in that only one end wall (3) is connected rigidly to the mixing means and the other end wall is movable.
32. Mixing device according to any of the preceding claims, characterised in that the movable end wall (3) is connected to the mixing means in the first position and

is separated from the mixing means in the second position.